

WHAT IS CLAIMED IS:

1. An electrical bicycle shift control device comprising:
a handlebar mounting portion that is configured to be fixedly mounted in a free end of a handlebar; and
an electrical shift control switch portion fixedly mounted to the handlebar mounting portion, the electrical shift control switch portion including an operating member arranged and configured to be selectively moved relative to the handlebar mounting portion between a neutral position and a first actuating position.
2. The electrical bicycle shift control device according to claim 1, wherein
the operating member is further arranged and configured to be selectively moved relative to the handlebar mounting portion between the neutral position and a second actuating position that is spaced from the first actuating position.
3. The electrical bicycle shift control device according to claim 2, wherein
the electrical shift control switch portion further includes a biasing element arranged and configured to urge the operating member to the neutral position.
4. The electrical bicycle shift control device according to claim 3, wherein
the operating member of the electrical shift control switch portion is further arranged and configured to rotate about an operating axis between the neutral position and the first and second actuating positions.
5. The electrical bicycle shift control device according to claim 4, wherein
the operating axis of the operating member is parallel to a center axis of the free end of the handlebar.
6. The electrical bicycle shift control device according to claim 3, wherein

the operating member of the electrical shift control switch portion is further arranged and configured such that the first and second actuating positions are arranged on opposite sides of the neutral position.

7. The electrical bicycle shift control device according to claim 1, wherein

the electrical shift control switch portion is detachably coupled to the handlebar mounting portion such that the electrical shift control switch portion can be removed from the handlebar mounting portion without removing the handlebar mounting portion from the free end of the handlebar.

8. The electrical bicycle shift control device according to claim 1, wherein

the operating member has a curved operating surface with a curvature substantially corresponding to a curvature of the free end of the handlebar.

9. The electrical bicycle shift control device according to claim 1, wherein

the handlebar mounting portion includes a support member with the electrical shift control switch portion coupled thereto and an expandable unit coupled to the support member that is slidable within the free end of the handlebar in a first configuration and non-slidable in a second configuration.

10. The electrical bicycle shift control device according to claim 9, wherein

the expandable unit includes an axially movable member that moves in response to movement of a fixing member of the handle bar mounting portion, and an expansion structure that moves radially outwardly upon axially moving the axially movable member.

11. The electrical bicycle shift control device according to claim 10, wherein

the expansion structure includes a plurality of expansion members that are separate members from the axially movable member.

12. The electrical bicycle shift control device according to claim 11,
wherein

the expansion members are curved members circumferentially arranged about a longitudinal axis of the fixing member to move radially outwardly upon axially moving the axially movable member.

13. The electrical bicycle shift control device according to claim 12,
wherein

the expansion structure includes a resilient ring extending around the expansion members to retain the expansion members together with the fixing member and the axially movable member.

14. The electrical bicycle shift control device according to claim 10,
wherein

the axially movable member includes a first wedge surface that cooperates with a second wedge surface of the expansion structure to move the expansion structure radially outwardly upon moving the fixing member.

15. The electrical bicycle shift control device according to claim 14,
wherein

the support member includes a projecting section with a third wedge surface that cooperates with a fourth wedge surface of the expansion structure to move the expansion structure radially outwardly upon moving the fixing member.

16. The electrical bicycle shift control device according to claim 10,
wherein

the support member includes a projecting section with a first wedge surface that cooperates with a second wedge surface of the expansion structure to move the expansion structure radially outwardly upon moving the fixing member.

17. The electrical bicycle shift control device according to claim 10,
wherein

the expansion structure includes a resilient element that retains the expansion structure together with the fixing member and the axially movable member.

18. The electrical bicycle shift control device according to claim 10, wherein

the fixing member includes a threaded shaft and the axially movable member is threadedly mounted on the threaded shaft to move axially upon rotation of the threaded shaft.

19. The electrical bicycle shift control device according to claim 9, wherein

the support member includes at least one handlebar support element extending axially therefrom away from the electrical shift control switch portion that is configured and arranged to contact an external surface of the free end of the handlebar.

20. The electrical bicycle shift control device according to claim 19, wherein

the support member includes a pair of the handlebar support elements.

21. The electrical bicycle shift control device according to claim 20, wherein

the support member includes a wire opening circumferentially arranged between the handlebar support elements.

22. The electrical bicycle shift control device according to claim 20, wherein

the handlebar support elements are circumferentially arranged on a substantially opposite side of the electrical bicycle shift control device from a hand actuating section of the operating member.